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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,184	11/15/2003	Robert Niemand	200207096-1	9828

22879 7590 06/01/2005

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EXAMINER	
LAXTON, GARY L	
ART UNIT	**PAPER NUMBER**
2838	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,184	NIEMAND ET AL.	
	Examiner	Art Unit	
	Gary L. Laxton	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-17* is/are allowed.

6)☒ Claim(s) *1,2,6-11 and 18-34* is/are rejected.

7)☒ Claim(s) *3-5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 2, 6-11 and 18-20, 33 and 34 have been considered but are moot in view of the new ground(s) of rejection.

2. Applicant's arguments filed 3/15/05, with respect to claims 21 and 30-32 and the Konno and Allen references, have been fully considered but they are not persuasive.

First, applicant argues Allen does not disclose once a voltage of the second DC signal reaches a first voltage level in the low power or first mode, switching of the first DC signal is lessened but not stopped. Allen discloses Burst mode switching in low power mode. In Burst mode the switching does not stop, it only pauses. There is still a pulse train. It is also a continuous pulse train. The only difference is, there is a greater time delay between the bursts. Therefore, the switching is in fact lessened and it does not stop since there a bust of switching at different time intervals. In other words, the circuit is still switching, it does not turn off indefinitely and the switching never stops, it continues and only pauses until the next bust cycle. A pulse train is continuously formed and does not stop. And with the bust pulses being spaced apart the switching is then in fact lessened compared to normal mode.

Second applicant argues that Konno does not switch in a low power mode until a voltage of a DC signal reaches a given first voltage level. The examiner disagrees. Konno states that in a standby mode, the mode changeover controller intermittently

operates the PWM control circuit so as to turn on the switching element at a given repetition interval and for a given time period. This repetition interval is shorter than a time for decreasing an output voltage from a rectifying and smoothing circuit down to a guaranteed load operating voltage (abstract).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 21 and 30-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Allen (6,538,419).

Allen et al disclose a power supply with a low power mode in which the duty cycle switches to a lesser duty cycle when entering low power mode when the voltage decays.

5. Claims 21 and 30-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Konno (US 6,549,429).

Konno discloses a power supply with a low power mode in which the duty cycle switches to a lesser duty cycle when entering low power mode when the voltage decays.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 1, 2, 6-11 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faulk (US 5,751,565) in view of Utsunomiya (US 6,798,086).

Claims 1, 2, 6-10 and 18-20; Faulk disclose a conversion mechanism and a feedback mechanism that operates in nominal mode and reduced mode.

However, Faulk does not disclose switching between modes according to a control signal received from the electronic load device.

Utsunomiya teaches a circuit where the load circuit outputs an operating mode signal for notifying in which of a first and second operating modes the loading circuit is operated in. In accordance with such a construction, the operating mode of the load circuit can be reliably known so that control can be more reliably performed and power can be stably supplied to the load circuit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Faulk to include switching between modes according to a control signal received from the electronic load device as taught by Utsunomiya so that control can be more reliably performed and power can be stably supplied to the load circuit.

Claim 11; it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art

apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the power supply device of Faulk in an image forming device such as a printer in order to provide power to the image forming device.

8. Claims 21-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faulk (US 5,751,565) and Utsunomiya (US 6,798,086) in view of Yang (US 6,496,390).

Faulk and Utsunomiya disclose the claimed subject matter including operating a power supply in hysteretic mode (i.e. between two voltage levels).

However, Faulk and Utsunomiya do not disclose entering a low power mode in order to fluctuate between two different voltages.

Yang teaches modifying a feedback signal in order to enter a low power mode. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the feedback signal to force the power supply of Faulk to fluctuate between two different voltage levels of a lesser voltage in order to conserve power in a hysteretic mode.

9. Claims 26-29, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faulk (US 5,751,565) and Utsunomiya (US 6,798,086) in view of Allen et al (US 6,538,419).

Faulk and Utsunomiya disclose a switching mechanism to control conversion; and a pwm mechanism to control the pulses to regulate the load in a hysteretic mode (i.e. upper and lower thresholds).

However, Faulk and Utsunomiya do not disclose the details of the pwm mechanism including a comparison mechanism and further does not disclose a modal mechanism to modify the signal to the comparison mechanism in response to a control signal assertion or lack thereof.

Allen et al teaches a comparing mechanism (error amp) and modal mechanism (303) for modifying the signal to the comparison mechanism in order change the power supply from a run mode to standby mode.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made modify Faulk to include a modal mechanism to modify the signal to a comparison mechanism in order to put the power supply in a standby mode from a run mode or vice versa in order to conserve power when entering standby mode.

Allowable Subject Matter

10. Claims 12-17 are allowed.

11. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Claims 3-5; the reasons for allowance remains the same stated in the previous office action dated 12/17/04.

Claims 12-17; prior art fails to disclose or suggest, inter alia, a power supply comprising: a comparing mechanism to compare a voltage of a second DC signal provided to an electronic device to a first voltage level and a second voltage level and to cause a switching control mechanism to switch the first DC signal low upon the voltage of the second DC signal reaching the first voltage level so that the voltage of the second DC signal decreases and to switch the first DC signal high upon the voltage of the second DC signal reaching the second voltage level so that the voltage of the second DC signal increases; and, a modal mechanism to pass through the second DC signal to the comparing mechanism without modification in absence of assertion of a control signal by the electronic device to cause the switching control mechanism to operate in a normal-power mode, and to modify the second DC signal before passing the second DC signal to the comparing mechanism upon assertion of the control signal by the electronic device to cause the switching control mechanism to operate in a low-power mode.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary L. Laxton
Primary Examiner
Art Unit 2838

5/26/05